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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/501,837

11/16/2004

Paul R. Aimone

Mo-7306/NRC-P74

6922

23416 7590 05/16/2008
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EXAMINER

MAI, NGOCLAN THI

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

05/16/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/501,837	Applicant(s) AIMONE ET AL.	
	Examiner NGOCLAN T. MAI	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/31/08.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 9-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Claims 1-8 are currently under examination, wherein claim 1 is amended in applicant's amendment filed on January 31, 2008. The applicant's affirmation of the provisional election of the Invention of I, claims 1-8 without traversal in the same amendment by authorizes the examiner to cancel the non-elected claims is acknowledged.
2. Upon further consideration the claims further restricted as follows.

Election/Restrictions

3. Amended claim 1 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: This application contains claims directed to the following patentably distinct species:

- a) embodiment where a refractory metal part is a sputtering target,
- b) embodiment where a refractory metal part is metal part is a tube performs, or
- c) embodiment where a refractory metal part is metal part is a furnace part preform.

The species are independent or distinct because claims to the different species recite the mutually exclusive characteristics of such species. In addition, these species are not obvious variants of each other based on the current record.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1-8 are generic.

There is an examination and search burden for these patentably distinct species due to their mutually exclusive characteristics. The species require a different field of search (e.g.,

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searching different classes/subclasses or electronic resources, or employing different search queries); and/or the prior art applicable to one species would not likely be applicable to another species; and/or the species are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

Since applicant has received an action on the merits for the originally presented invention, i.e., species a), this invention has been constructively elected by original presentation for prosecution on the merits.

Status of Previous Rejection

The previous rejections of claims 1-6 and 8 is withdrawn in light of applicant's amendment filed 1/31/08. However upon further consideration and search, the claims are rejected as follows.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aimone et al. (US 2002/0112955) in view of Brown et al (U.S. Patent No. 4,323,756).

Aimone et al discloses a method for rejuvenating sputtering target refractory metal product comprising filing a powder into a selected zone of a consumption refractory metal part and high energy heating the at high scan speed to sinter the added powder without completely

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melting the powder fill. The rejuvenated refractory metal part can be as cylinder or sputtering target. See abstract and [0004]-[0006]. The heating is carried out by laser or EB heating for sintering and method yields a fully dense coating. See [0007]. Aimone et al also teaches the process is carried out in a vacuum or inert gas zone. Aimone et al further teaches the target is placed in a vacuum chamber evacuated atmospheric pressure purified inert gas (argon) atmosphere. See [0018].

Aimone et al differs from the claims in that Aimone et al does not specifically teach melting the substrate and the powder with a laser beam.

Brown et al. teaches a method for fabricating articles by sequential layer deposition of powder on a substrate wherein the substrate is melted to a depth greater than the thickness of the applied feedstock layer. See col. 4, line 65 to col. 5, line 5. Brown et al. continues to teach the multiple melting permits some material purification since some impurities may be vaporized, ensures the production of a pore free structure, provides perfect metallurgical bonding between deposited layers and promotes continuity of grain structure, i.e., epitaxial growth from one layer to the next. See col. 5, lines 7- 12.

It would have been obvious to one skill in the art that the substrate of Aimone et al also be melted by the laser beam with the first applied feedstock process for the improvement noted by Brown et al.

Concerning claim 6 Aimone et al teaches the filled erosion zones were substantially free of porosity and inclusion, i.e., pure.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGOCLAN T. MAI whose telephone number is (571)272-1246.

The examiner can normally be reached on 8:30-5:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit
1793

n.m.